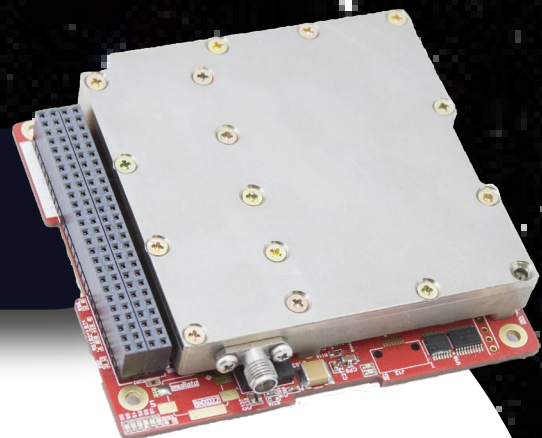


NANO-X CubeSat X-Band Transmitter



Product Overview

The NANO-X is a high-performance, compact X-band transmitter tailored for nano and micro-satellite applications. Designed to meet the stringent requirements of CubeSat missions, the NANO-X transmitter delivers reliable, configurable communication capabilities while maintaining a low power footprint. With in-flight configurability and multiple modulation and coding options, it ensures adaptability for various mission profiles.

Key Features

Frequency Range: 8.0 to 8.4 GHz, in-flight configurable, optimized for a 100 MHz bandwidth.

Power Output: Adjustable from 23 to 33 dBm (2W), configurable in 1 dB steps.

Channel Symbol Rate: Flexible range of 1M to 30M symbols/sec.

Channel Coding Options: CCSDS LDPC7/8, Reed-Solomon (RS), RS/Convolutional.

Modulation Schemes: DQPSK, OQPSK, QPSK, with options for advanced schemes such as 8-PSK, 16-APSK, and 32-APSK.

Interfaces: Versatile telemetry/command and payload data interfaces, including CAN, RS232, RS422, LVDS, SPI, and QSPI.

Compact Design: Cubesat form factor (90 x 96 x 25 mm) with a mass of ~250 grams.

Wide Operating Temperature Range: Designed for -30°C to +50°C ambient temperature and -30°C to +70°C box temperature.

Applications

- High-data-rate telemetry and payload data downlink.
- Mission-critical communications for Earth observation, science, and interplanetary CubeSat missions.
- Adaptable for missions requiring dynamic configuration and reliable X-band communication.

Specifications



Parameter	Value	Description
Frequency	8.0 ~ 8.4 GHz	In-flight configurable, optimized for 100 MHz BW
Output Power	23 to 33 dBm (2W)	Adjustable in 1 dB steps
Supply Voltage	8 ~ 36 V	Unregulated
Power Consumption	~14 W	Not exceeding <15 W
Channel Symbol Rate	1M ~ 30M S/sec	In-flight configurable
Frequency Stability	< 1 PPM	Ensures precision and reliability
Channel Coding	CCSDS LDPC7/8, RS, RS/Conv.	Specify at order time
Modulation	DQPSK, OQPSK, QPSK	Specify at order time
Alternative Modulation	8-PSK, 16-APSK, 32-APSK	Specify at order time
Telemetry/Command Interface	CAN, RS232, RS422	Specify at order time
Payload Data Interface	RS422, LVDS, SPI, QSPI	Specify at order time
Connectors	104-Pin Cubesat Standard	Customizable pin and socket height
RF Connector	SMA Female	Industry-standard connector
Mass	~250 g	Lightweight design
Dimensions	90 x 96 x 25 mm	Cubesat Form Factor
Operating Ambient Temperature	-30 ~ +50 °C	Without thermal coupling
Operating Box Temperature	-30 ~ +70 °C	Requires satellite thermal control